Amendments to the Claims:

This listing of claims will replace all prior versions, and listings, of claims in the application:

Listing of Claims:

Claims 1 - 26. (cancelled)

Claim 27. (Currently Amended) An apparatus for decoding a stream of coded video data, the method comprising:

identifying data of a coded video object based on a start code indicative thereof;

identifying data of a plurality of coded video object layers (VOLs) based on respective VOL start codes;

identifying data of plurality of coded video object planes (VOPs) based on respective VOP start codes, each coded VOP being a member of at most one VOL;

determining, from data of a first VOL:

whether scalability had been applied~~, identifying from the coded~~ to the first VOL at coding;

if scalability had been applied, identifying from the coded data of the first VOL data a second VOL that is a reference layer to the first VOL; and

decoding a VOP from the first VOL with reference to a VOP of the second video object layer.

Claim 28. (Currently Amended) The decoding apparatus of claim 27, wherein the data of the first VOL comprises, if scalability had been applied, the following fields:

a scalability flag, indicating ~~the~~ a use of scalability;

ref_layer_id, identifying the second VOL;

ref_layer_sampling_direc, indicating whether the second layer has higher resolution than the layer being coded;

hor_sampling_factor_n, identifying a numerator of a ratio to be used in horizontal spatial resampling in scalability;

hor_sampling_factor_m, identifying a denominator of the ratio to be used in horizontal spatial resampling in scalability;

vert_sampling_factor_n, identifying a numerator of a ratio to be used in vertical spatial resampling in scalability; and

vert_sampling_factor_m, identifying a denominator of the ratio used in vertical spatial resampling in scalability.

Claim 29. (Currently Amended) The decoding apparatus of claim 27, wherein data of a VOP may be coded according to one of the following techniques: intra coding, predictive coding ~~and~~ or bidirectionally predictive coding and the method further comprises:

for a predictive coded VOP (P-VOP), decoding the P-VOP data with reference to data of at most one other reference VOP; and

for a bidirectionally coded VOP (B-VOP), decoding the B-VOP data with reference to data of at most two other reference VOPs.

Claim 30. (Previously Presented) The decoding apparatus of claim 29, further comprising, for a P-VOP that is a member of a VOL for which scalability had been applied, identifying the reference VOP from a ref_select_code provided in the data of the P-VOP, respective values of the ref_select_code identifying the reference VOP as one of:

a most recently decoded VOP in the VOL to which the P-VOP belongs;

a most recent VOP in display order belonging to the reference layer;

a next VOP in display order belonging to the reference layer; and

a temporally coincident VOP in the reference layer.

Claim 31. (Previously Presented) The decoding apparatus of claim 30, wherein the ref_select_code is a two bit code.

Claim 32. (Previously Presented) The decoding apparatus of claim 29, further comprising, for a B-VOP that is a member of a VOL for which scalability had been applied, identifying forward and backward reference VOPs from a ref_select_code provided in the data of the B-VOP, respective values of the ref_select_code identifying the forward and backward reference VOPs as one of:

forward:

a most recently decoded VOP in the VOL to which the B-VOP belongs; and

a recent VOP in display order belonging to the reference layer; and

backward:

a temporally coincident VOP in the reference layer;

a most recent VOP in display order belonging to the reference layer; and

a next VOP in display order belonging to the reference layer.

Claim 33. (Previously Presented) The decoding apparatus of claim 32, wherein the ref_select_code is a two bit code.

Claim 34. (Previously Presented) A video decoding system in which video objects are recognized from video data, wherein instances of a video object at given times are coded as video object planes (VOPs) and VOPs may be assigned to one or more video object layers,

the video decoder system comprising a decoder structure, the decoder structure further comprising:

a base layer decoder having an input for VOP data associated with a first video object layer of the video object;

a processor coupled to an output of the base layer decoder; and

an enhancement layer decoder, having a first input for VOP data associated with a second video object layer of the video object and a second input coupled to the processor and responsive to predictive coded VOP (P-VOP) data and, in particular, to a ref_select_code included therein, the enhancement layer decoder decoding the P-VOP data with reference to one of:

data of a VOP most recently decoded by the enhancement layer decoder;

data of a most recent VOP in a display order decoded by the base layer decoder;

data of a next VOP in a display order decoded by the base layer decoder; and

data of a temporally coincident VOP by the base layer decoder.

Claim 35. (Previously Presented) The video decoder system of claim 34, wherein the processor performs a spatial up sampling of data received from the base layer decoder.

Claim 36. (Currently Amended) The video decoder system of claim 34, wherein the ~~midprocessor~~ processor performs a spatial down sampling of data received from the base layer decoder.

Claim 37. (Previously Presented) A video decoding system in which video objects are recognized from video data, wherein instances of a video object at given times are coded as

video object planes (VOPs) and VOPs may be assigned to one or more video object layers, the video decoding system comprising:

a base layer decoder having an input for VOP data associated with a first video object layer of the video object;

a processor coupled to an output of the base layer decoder; and

an enhancement layer decoder, having a first input for VOP data associated with a second video object layer of the video object and a second input coupled to the processor and responsive to bidirectionally-predictive coded VOP (B-VOP) data and, in particular, to a ref_select_code included therein, the enhancement layer decoder decoding the B-VOP data with reference to forward and backward reference VOPs selected from the group of:

forward:

data of a VOP most recently decoded by the enhancement layer decoder; and

data of a most recent VOP in display order decoded by the base layer decoder; and

backward:

data of a temporally coincident VOP decoded by the base layer decoder;

data of a most recent VOP in display order decoded by the base layer decoder; and

data of a next VOP in display order decoded by the base layer decoder.

Claim 38. (Previously Presented) A video coding system that codes data for a video object layer, wherein video objects are recognized from video data, instances of a video object at given times are coded as video object planes (VOPs) and VOPs may be assigned to one or more video object layers, the video coding system having a memory that stores computer instructions to instruct the video coding system to perform the steps of:

generating a start code that marks a new video object layer;

generating a layer id field that uniquely identifies the new video object layer;

generating VOP data for the new video object layer; and

outputting the start code, the layer id field and coded VOP data in a data signal.

Claim 39. (Currently Amended) The video coding system of claim 38, further comprising, if scalability is used for coding of the video object layer, the video coding system generates the following signals:

a scalability flag, identifying ~~the~~ a use of scalability;

ref_layer_id, identifying a second video object layer to be used as a reference for predictions;

ref_layer_sampling_direc, indicating whether the second layer has higher resolution than the layer being coded;

hor_sampling_factor_n, identifying a numerator of a ratio to be used in horizontal spatial resampling in scalability;

hor_sampling_factor_m, identifying a denominator of the ratio to be used in horizontal spatial resampling in scalability;

vert_sampling_factor_n, identifying a numerator of ~~the~~ a ratio to be used in vertical spatial resampling in scalability;

vert_sampling_factor_m, identifying a denominator of the ratio to be used in vertical spatial resampling in scalability.

Claim 40. (Previously Presented) The video coding system of claim 39, wherein lengths of the signals are given by:

SIGNAL	BIT LENGTH
scalability flag	1
ref_layer_id	4
ref_layer_sampling_direc	1
hor_sampling_factor_n	5
hor_sampling_factor_m	5
vert_sampling_factor_n	5
vert_sampling_factor_m	5

Claim 41. (Currently Amended) The video coding system of claim 40, wherein the video coding system further generates respective height and width signals defining ~~the~~ a spatial resolution of the video object layer in pixels.

Claim 42. (Previously Presented) A computer-readable medium storing instructions for controlling a computing device to perform the steps of:

recognizing video objects from video data;

recognizing instances of a video object at given times as video object planes (VOPs);

assigning VOPs to one or more video object layers;

coding data for one of the video objects layers, the step of coding comprising:

generating a start code that marks the one video object layer;

generating a layer id field that uniquely identifies the one video object layer;

coding the VOPs in the one video object layer; and

outputting the start code, the layer id field and coded VOP data as the coded data signal.

Claim 43. (Currently Amended) The computer-readable medium of claim 42, wherein the instructions on the computer-readable medium further comprise: if scalability is used for coding of the video object layer, generating the following signals:

a scalability flag, identifying ~~the~~ a use of scalability;

ref_layer_id, identifying a second video object layer to be used as a reference for predictions;

ref_layer_sampling_direc, indicating whether the second layer has higher resolution than the layer being coded;

hor_sampling_factor_n, identifying a numerator of a ratio to be used in horizontal spatial resampling in scalability;

hor_sampling_factor_m, identifying a denominator of the ratio to be used in horizontal spatial resampling in scalability;

vert_sampling_factor_n, identifying a numerator of a ratio to be used in vertical spatial resampling in scalability, and

vert_sampling_factor_m, identifying a denominator of the ratio used in vertical spatial resampling in scability.

Claim 44. (Currently Amended) ~~the~~ The computer-readable medium of claim 43, wherein bit lengths of the signals are given by:

SIGNAL	BIT LENGTH
scalability flag	1
ref_layer_id	4
ref_layer_sampling_direc	1
hor_sampling_factor_n	5
hor_sampling_factor_m	5
vert_sampling_factor_n	5
vert_sampling_factor_m	5

Claim 45. (Currently Amended) The computer-readable medium of claim 43, further comprising generating respective height and width signals defining ~~the~~ a spatial resolution of the video object layer in pixels.

Claim 46. (Currently Amended) A computer-readable medium storing instruction for controlling a computing device to perform the steps of:

identifying data of a coded video object based on a start code indicative thereof;

identifying data of a plurality of coded video object layers (VOLs) based on respective VOL start codes;

identifying data of plurality of coded video object planes (VOPs) based on respective VOP start codes, each coded VOP being a member of at most one VOL;

determining, from data of a first VOL:

whether scalability had been applied~~, identifying from the coded~~ to the first VOL coding; and

if scalability had been applied, identifying from the coded data of the first VOL data a second VOL that is a reference layer to the first VOL; and

decoding a VOP from the first VOL with reference to a VOP of the second video object layer.

Claim 47. (Previously Presented) The computer-readable medium of claim 46, wherein the data of the first VOL comprises, if scalability had been applied, the following fields:

a flag indicating the use of scalability;

a parameter identifying the second VOL;

a parameter indicating whether the second layer has higher resolution than the layer being coded;

a parameter identifying a numerator of a ratio to be used in horizontal spatial resampling in scalability;

a parameter identifying a denominator of the ratio to be used in horizontal spatial resampling in scalability;

a parameter identifying a numerator of a ratio to be used in vertical spatial resampling in scalability; and

a parameter identifying a denominator of the used in vertical spatial resampling in scalability.

Claim 48. (Previously Presented) The computer-readable medium of claim 46, wherein data of a VOP may be coded according to one of the following techniques: intra coding, predictive coding and bidirectionally predictive coding.

Claim 49. (Previously Presented) The computer-readable medium of claim 48, wherein the instructions on the computer-readable medium further comprise:

for a predictive coded VOP (P-VOP), decoding the P-VOP data with reference to data of at most one other reference VOP; and

for a bidirectionally coded VOP (B-VOP), decoding the B-VOP data with reference to data of at most two other reference VOPs.

Claim 50. (Previously Presented) The computer-readable medium of claim 49, further comprising, for a P-VOP that is a member of a VOL for which scalability had been applied, identifying the reference VOP from a ref_select_code provided in the data of the P-VOP, respective values of the ref_select_code identifying the reference VOP as one of:

a most recently decoded VOP in the VOL to which the P-VOP belongs;

a most recent VOP in display order belonging to the reference layer;

a next VOP in display order belonging to the reference layer; and

a temporally coincident VOP in the reference layer.

Claim 51. (Previously Presented) The computer-readable medium of claim 50, wherein the ref_select_code is a two bit code.

Claim 52. (Previously Presented) The computer-readable medium of claim 49, further comprising, for a B-VOP that is a member of a VOL for which scalability had been applied, identifying forward and backward reference VOPs from a ref_select_code provided in the data of the B-VOP, respective values of the ref_select_code identifying the forward and backward reference VOPs as one of:

forward:

a most recently decoded VOP in the VOL to which the B-VOP belongs; and

a recent VOP in display order belonging to the reference layer; and

backward:

a temporally coincident VOP in the reference layer;

a most recent VOP in display order belonging to the reference layer; and

a next VOP in display order belonging to the reference layer.

Claim 53. (Previously Presented) The computer-readable medium of claim 52, wherein the ref_select_code is a two bit code.